William G. Ross Jr., Secretary
North Carolina Department of Environment and Natural Resources

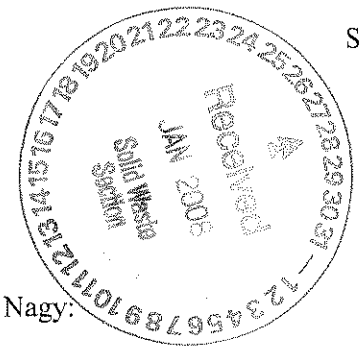
Coleen H. Sullins, Director
Division of Water Quality

January 22, 2008

Permit No. 35-04

MR. THOMAS NAGY, PRESIDENT
NOVOZYMES NORTH AMERICA, INC.
POST OFFICE BOX 576
FRANKLINTON, NORTH CAROLINA 27575

Fac/Perm/Co ID #	Date	Doc ID#
35-04	6/18/08	DIN 4889



Subject: Permit No. WQ0003487 Correction
Novozymes North America, Inc.
Novozymes Residuals Distribution and Land Application Program
Distribution of Residual Solids (503 Exempt)
Franklin County

Dear Mr. Nagy:

In accordance with a telephone request received from Mr. Steve Stadelman on January 10, 2008, we are forwarding herewith the corrected Permit No. WQ0003487, issued December 21, 2007, for the subject facility.

The following correction has been made to the permit:

The setbacks specified in permit condition II.6. have been removed and replaced by the following:

When land applying bulk residuals to any land application site, the following setbacks shall be maintained (all distances in feet):

	Liquid	**Cake**
a. Any private or public water supply source:	100	100
ii. Surface waters:	100	25
iii. Surface water diversions:	25	0
iv. Groundwater lowering ditches:	25	0
v. Any well with exception of monitoring wells:	100	100
vi. Bedrock outcrops:	25	0

"Cake" residuals are residuals that have greater than 15% solids by weight and can be stacked without flowing, and handled, transported and spread as a solid (i.e., using a backhoe, front end loader, slinger spreader, broadcast spreader or other equipment designed for handling solid materials) without leaving any significant liquid fraction behind.

Please replace Pages 3 through 11 with the corrected Pages 3 through 10 into Permit No. WQ0003487, issued December 21, 2007.

If you have any questions regarding this request, please do not hesitate to contact Mr. Duane Leith by email at duane.leith@ncmail.net or by phone at (919) 715-6186. Thank you for your cooperation.

Sincerely,

Coleen H. Sullins

cc: Franklin County Health Department
Raleigh Regional Office, Aquifer Protection Section
Paul Crissman, Chief, Solid Waste Section
Technical Assistance and Certification Unit
APS Central Files
LAU Files

4. When residuals are distributed or land applied under the conditions of this permit, the pathogen requirements and site restrictions in 15A NCAC 02T .1106 (a) and (b), and one vector attraction reduction requirements in 15A NCAC 02T .1107 (a) shall be met. Additionally, an evaluation shall be performed that demonstrates the residuals' ability to comply with this requirement. Upon request, a copy of this evaluation, including all test results and calculations, shall be submitted. Only residuals that are identified as being exempt from this condition shall not be required to comply with the specified pathogen reduction and vector attraction reduction requirements.

5. For residuals treatment and storage facilities, the following minimum setbacks shall be maintained, except where the entities currently exist within the minimum setback or are beyond the control of the facility (all distances are in feet) :

i. Any habitable residence or place of public assembly under separate ownership:	100
ii. Any property line:	50
iii. Any private or public water supply source:	100
iv. Surface waters:	50
v. Any well with exception of monitoring wells:	100

6. When land applying bulk residuals to any land application site, the following setbacks shall be maintained (all distances in feet):

	Liquid	**Cake**
b. Any private or public water supply source:	100	100
ii. Surface waters:	100	25
iii. Surface water diversions:	25	0
iv. Groundwater lowering ditches:	25	0
v. Any well with exception of monitoring wells:	100	100
vi. Bedrock outcrops:	25	0

"Cake" residuals are residuals that have greater than 15% solids by weight and can be stacked without flowing, and handled, transported and spread as a solid (i.e., using a backhoe, front end loader, slinger spreader, broadcast spreader or other equipment designed for handling solid materials) without leaving any significant liquid fraction behind.

7. Specific residuals land application area boundaries shall be clearly marked on each land application site prior to and during a bulk residuals land application event.

8. Bulk residuals and other sources of Plant Available Nitrogen (PAN) shall be land applied to all land application sites at or below agronomic rates. Appropriate agronomic rates shall be calculated using expected nitrogen requirements based on the Realistic Yield Expectations (RYE) for each approved land application site. Realistic Yield Expectations for crop types and specific fields or soils types shall be determined by using any of the following methods:

   a. North Carolina Historical Data for specific crop and soil types as provided by North Carolina State University Department of Soil Science. The Department webpage is located at: http://www.soil.ncsu.edu/nmp/ncnmwg/yields/

   b. Site Specific Historical Data for crop types on specific fields or soil types by calculating the mean of the best three yields of the last five consecutive crop harvests for each field.

c. If the RYE cannot be determined using methods 8(a) or (b) above, RYE can be established from specially developed soil interpretation records for Nutrient Management Planning, Farm Service Agency Records, university trials, or inference from crop performance on soil with very similar physical and chemical features.

d. Realistic Yields Expectations and acceptable nitrogen application rates that use the above methodology are required parts of many agricultural planning documents. The Permittee may use the RYE and appropriate agronomic rates reported in any of the following documents:

i. **Crop management plan** as outlined by the local Cooperative Extension Office, the North Carolina Department of Agriculture and Consumer Services, the Natural Resource Conservation Service, or other agronomist.

ii. **Waste Utilization Plan** as outlined by Senate Bill 1217 Interagency Group- Guidance Document: Chapter 1. Guidance for the completion of the plan can be found at: http://www.enr.state.nc.us/DSWC/pages/guidance_docs.html.

iii. **Certified Nutrient Management Plan** as outlined by Natural Resources Conservation Services (NRCS). These plans must meet the USDA-NRCS 590 Nutrient Management Standards, which are available at: ftp://ftp-fc.sc.egov.usda.gov/NHQ/practice-standards/standards/590.pdf

e. For any crop type for which the RYE and appropriate nitrogen application rate cannot be determined, the Permittee shall contact the Division to determine necessary action.

9. If the land application sites are to be overseeded (e.g., bermuda grass in the summer and rye grass in the winter with BOTH crops to receive residuals), then the second crop shall receive an application of PAN at a rate of no greater than 50 pounds per acre per year. This practice shall be allowed as long as the second crop is to be harvested. If the second crop is to be planted for erosion control only and is to be tilled into the soil, then no residuals shall be land applied to these sites because the PAN will essentially be returned to the soil.

   Prior to application of PAN to permitted sites at rates exceeding the agronomic rate, the Permittee must submit and receive approval by the Division.

10. Should the residuals generated contain a high salt content (i.e., high sodium adsorption ratio (SAR) of ten (10) or higher), the Permittee shall obtain and implement recommendations from the local Cooperative Extension Office, the Department of Agriculture and Consumer Services, the Natural Resource Conservation Service, a North Carolina-licensed Soil Scientist, or other agronomist regarding sodium application rate, soil amendments (e.g., gypsum, etc.) or other ameliorative mechanism for maintaining the integrity of the site in terms of suitability for land application of residuals and maintaining conditions conducive to crop growth. The Permittee shall maintain written records of each monitoring event that includes details of the sites covered and rate of soil amendment application.

11. The COMPLIANCE BOUNDARY for residuals land application programs is specified by regulations in 15A NCAC 2L (i.e., "Groundwater Classifications and Standards"). The Compliance Boundary for each land application site is established at either 250 feet from the residuals land application area or 50 feet within the property boundary, whichever is closest to the residuals land application area. Per 15A NCAC 2T .0105(h), upon the request by the Permittee the Compliance Boundary may be located closer to the waste disposal area (provided the groundwater standards can be met at the newly established Compliance Boundary). Any approved relocation of the COMPLIANCE BOUNDARY will be noted in this permit. An exceedance of Groundwater Standards at or beyond the Compliance Boundary is subject to remediation action according to 15A NCAC 2L .0106(d)(2) as well as enforcement actions in accordance with North Carolina General Statute 143-215.6A through 143-215.6C.

12. The REVIEW BOUNDARY shall be established around each land application site midway between the Compliance Boundary and the perimeter of the residuals land application area. Any exceedance of Groundwater Quality Standards at the Review Boundary shall require action in accordance with 15A NCAC 2L .0106 (d)(1).

13. All land application of bulk residuals shall be conducted by Novozymes North America, Inc. employees or personnel contracted for this purpose by Novozymes North America, Inc. and supervised by the ORC or backup ORC as specified by permit condition III.3.

14. The bulk residuals shall be transported to the application sites by truck and shall be applied to the fields by a manure spreader appropriate for the liquid, solid or semi-solid residuals.

15. Diversion or bypassing of the untreated residuals or leachate from the residual treatment facilities is prohibited.

16. Residuals shall not be stored nor land applied in areas of intense public use, such as schools, playgrounds, etc.

17. No residuals shall be land applied in WS-1 watersheds.

III. OPERATION AND MAINTENANCE REQUIREMENTS

1. The residuals management program shall be effectively maintained and operated at all times as a non-discharge system to prevent the discharge of any wastes resulting from the operation of this program. The Permittee shall maintain an Operation and Maintenance Plan pursuant to 15A NCAC 02T .1110 including operational functions, maintenance schedules, safety measures, and a spill response plan.

2. In the event that the residuals management program is not operated satisfactorily, including the creation of nuisance conditions, the Permittee shall cease land applying residuals to the site, contact the Aquifer Protection Section of the appropriate Division of Water Quality's (Division) regional office, and take any immediate corrective actions as may be required by the Division.

3. Upon classification of the residuals management program by the Water Pollution Control System Operators Certification Commission (WPCSOCC), the Permittee shall designate a certified land application/residuals operator to be in responsible charge (ORC) of the program. The operator shall hold a certificate of the type classification assigned to the program by the WPCSOCC. The Permittee shall also designate a certified back-up operator of the appropriate type to comply with the conditions of 15A NCAC 8G .0201.

4. This permit shall become voidable if the soils of the land application sites fail to assimilate the bulk residuals or the application causes contravention of surface water or groundwater standards and may be rescinded unless the land application sites are maintained and operated in a manner that will protect the assigned water quality standards of the surface waters and groundwater.

5. A copy of this permit shall be maintained in all manned equipment at the land application sites when residuals are being land applied during the life of this permit. A spill prevention and control plan shall be maintained in all residuals transport and application vehicles.

6. Adequate provisions shall be taken to prevent wind erosion and surface runoff from conveying residuals from the land application sites onto adjacent properties or into any surface waters.

7. Adequate procedures shall be provided to prevent surface runoff from carrying any land applied or stored residuals into any surface waters.

8. All residuals shall be adequately stored to prevent leachate runoff until treated. The finished product may be placed on a concrete pad, placed under shelter or covered until such time as it is distributed to the buyer. If an alternate storage site is to be used, approval must be obtained from the Division. The finished product residuals may not be stored greater than sixty days.

9. Bulk residuals shall not be applied to the land under the following conditions:

   a. If the residuals are likely to adversely affect a threatened or endangered species listed under section 4 of the Endangered Species or its designated critical habitat;

   b. If the application causes prolonged nuisance conditions;

   c. If the land fails to assimilate the bulk residuals or the application causes the contravention of surface water or groundwater standards;

   d. If the land is flooded, frozen, or snow-covered or is otherwise in a condition such that runoff of the residuals would occur;

   e. Within the 100-year flood elevation unless the bulk residuals are injected or incorporated within a 24-hour period following the residuals land application event;

   f. During a measurable precipitation event (i.e., >.01" per hour) or within 24 hours following a rainfall event of 0.5 inches or greater in a 24-hour period. Any emergency residuals land application measures shall first be approved in writing by the Division;

   g. If the slope for land is greater than 10 percent when bulk liquid residuals are surface applied, and if the slope of the land is greater then 18 percent with bulk liquid residuals are injected or incorporated;

   h. If the pH is not maintained in the soil, residuals, and lime mixture, greater than 6.0, on land application sites onto which residuals are applied. Residuals may be applied to the sites provided that sufficient amounts of lime is also applied to achieve a final pH of the soil mixture of at least 6.0, or if an agronomist provides information indicating that the pH of the soil, residuals, and lime mixture is suited for the specified crop type.

   i. If the land does not have an established vegetative cover in accordance with the crop management plan outlined by the local Cooperative Extension Office, the Department of Agriculture and Consumer Services, the Natural Resource Conservation Service, or other agronomist unless the bulk residuals are incorporated within a 24-hour period following the residuals land application event or injected;

   j. If the vertical separation of the seasonal high water table and the depth of residuals application is less than one foot;

   k. If the vertical separation of the depth to bedrock and the depth of residuals application is less than one foot;

10. This permit shall become voidable unless the agreements between the Permittee and the landowners and lessees or operators of any land application sites not owned by the Permittee are in full force and effect. These agreements shall be considered expired concurrent with the expiration date of the permit and shall be renewed at the same time the permit is renewed.

11. Upon entering an agreement with landowners to apply residuals to a land application site, the Permittee shall require of the landowner or lessee/operator a statement detailing the volume of nutrient sources (waste residuals, manufactured fertilizers, manures, or other animal waste products) other than the residuals to be applied by the Permittee, that have been applied to the land, and a copy of the most recent Nutrient Management Plan (NMP), if available, for the fields within the agreement. **For the purpose of this permit condition, a Crop Management Plan (CMP), Waste Utilization Plan (WUP) or Certified Nutrient Management Plan (CNMP) shall also be considered a Nutrient Management Plan.**

    The NMPs must be provided only for those operations where a NMP (also CMP, WUP, or CNMP) is required by the US Department of Agriculture – National Resources Conservation Service (NRCS) or other State Agencies. The Permittee shall rely on the provided information to calculate appropriate reductions in allowable nutrient loading rates. If the calculation shows that the agronomic rates (including PAN) have already been met or exceeded on a field, no additional residuals shall be land applied to that field.

IV. MONITORING AND REPORTING REQUIREMENTS

1. Any monitoring (i.e., including groundwater, surface water, residuals, soil, or plant tissue analyses) deemed necessary by the Division to ensure protection of the environment shall be established, and an acceptable sampling and reporting schedule shall be followed.

2. An analysis shall be conducted on the residuals monthly. The sampling conducted for this monitoring shall be conducted on the residuals at the point they are ready for land application or distribution. The results shall be maintained on file by the Permittee for a minimum of five years. The analysis shall include, but shall not necessarily be limited to, the following parameters:

Aluminum	Magnesium	pH
Ammonia-Nitrogen	Mercury	Plant Available Nitrogen (by calculation)
Arsenic	Molybdenum	Selenium
Cadmium	Nickel	Sodium
Calcium	Nitrate-Nitrite Nitrogen	% Total Solids
Copper	Phosphorus	TKN
Lead	Potassium	Zinc
Sodium Adsorption Ratio (SAR)		

If the residuals are not generated in sufficient quantity to require a distribution or land application event monthly, no sampling is required during the period of inactivity. The Permittee shall submit an annual report, as required in condition IV. 10., even in the event that no land application events occur during a month or an entire year. The annual report shall include an explanation for missing sampling data.

3. The residuals shall be monitored for compliance with Condition II. 4 at least once per month following the initiation of monitoring specified in Permit Conditions I.1 and I.2. The sampling conducted for this monitoring shall be conducted on the residuals at the point they are ready for land application or distribution. The data to verify pathogen and vector attraction reduction of the residuals shall be maintained on file by the Permittee for a minimum of five years. The required data shall be specific to the stabilization process utilized, but also shall be sufficient to demonstrate clear compliance with the Class A pathogen requirements and site restrictions in 15A NCAC 02T .1106 (a) and (b), and one vector attraction reduction requirements in 15A NCAC 02T .1107 (a) shall be met. In addition, the Environmental Protection Agency (EPA) certification statements concerning compliance with pathogen reduction requirements, vector attraction reduction requirements, and management practices shall be completed monthly by the proper authority or authorities, if more than one is involved (i.e., either the person who prepares the residuals, the person who derives the material, or the person who applies the residuals). Only residuals that are identified as being exempt from Condition II. 4. shall not be required to comply with this monitoring requirement.

4. Laboratory analyses of parameters as required by Condition IV. 1., Condition IV. 2., Condition IV. 3., and Condition IV. 4., shall be performed/gathered on the residuals as they are to be distributed or land applied.

5. Laboratory analyses of parameters as required by Condition IV. 1., Condition IV. 2., Condition IV. 3., and Condition IV. 4. shall be in accordance with 15A NCAC 02B .0505.

6. Proper records shall be maintained by the Permittee tracking all bulk residuals land application events. These records shall include, but are not necessarily limited to, the following information:

   a. Source of residuals;

   b. Date of land application;

   c. Location of land application;

   d. Method of land application;

   e. Weather conditions (i.e., sunny, cloudy, raining, etc.);

   f. Predominant Soil Mapping Unit (i.e., CbB2);

   g. Soil conditions (i.e., dry, wet, frozen, etc.);

   h. Type of crop or crops to be grown on field;

   i. Nitrogen Application Rate based on RYEs.

   j. Volume of residuals land applied in gallons per acre, cubic yard per acre , dry tons per acre, wet ton per acre , or kilograms per hectare;

   k. Volume of animal waste or other nutrient source applied in gallons per acre, dry ton per acre, or kilograms per hectare (if applicable);

   l. Volume of soil amendments (i.e., lime, gypsum, etc.) applied in gallons per acre, dry ton per acre, wet tons per acre, or kilograms per hectare (if applicable); and

   m. Annual and cumulative totals of dry tons per acre of residuals as well as animal waste and other sources of nutrients (i.e., if applicable), annual and cumulative pounds per acre of each heavy metal (i.e., shall include, but shall not be limited to, arsenic, cadmium, copper, lead, mercury, molybdenum, nickel, selenium, and zinc), annual pounds per acre of PAN, and annual pounds per acre of phosphorus applied to each field.

7. All records required as part of this permit shall be retained a minimum of five years.

8. Three copies of an annual report shall be submitted on or before March 1st. The annual report shall meet the requirements described in the Instructions For Residuals Application Annual Reporting Forms. The most recent instructions for reporting and annual report forms are available on the Land Application Unit website at http://h2o.enr.state.nc.us/lau/compliance.html, or can be obtained by contacting the Land Application Unit directly. The annual repost shall be submitted to the following address:

NCDENR-DWQ
Information Processing Unit
1617 Mail Service Center
Raleigh, North Carolina 27699-1617

9. **Noncompliance Notification**

The Permittee shall report by telephone to the Raleigh Regional Office, telephone number (919) 791-4200, as soon as possible, but in no case more than 24 hours or on the next working day following the occurrence or first knowledge of the occurrence of any of the following:

a. Any occurrence with the distribution program which results in the land application of significant amounts of wastes which are abnormal in quantity or characteristic.

b. Any failure of the distribution program resulting in a release of material to receiving waters.

c. Any time that self-monitoring information indicates that the facility has gone out of compliance with the conditions and limitations of this permit or the parameters on which the system was designed.

d. Any process unit failure, due to known or unknown reasons, that render the facility incapable of adequate residual treatment.

e. Any spillage or discharge from a vehicle or piping system during transportation of residuals.

For any emergency that requires immediate reporting (e.g., discharges to surface waters, imminent failure of a storage structure, etc.) outside normal business hours must be reported to the Division's Emergency Response personnel at telephone number (800) 662-7956, (800) 858-0368, or (919) 733-3300. Persons reporting such occurrences by telephone shall also file a written report in letter form within five (5) days following first knowledge of the occurrence. This report must outline the actions taken or proposed to be taken to ensure that the problem does not recur.

V. INSPECTIONS

1. Adequate inspection and maintenance shall be provided by the Permittee to ensure proper operation of the subject facilities.

2. The Permittee or his designee shall inspect the residuals storage, transport, and application facilities, at least once per month, to prevent malfunctions and deterioration, operator errors, and discharges that may cause or lead to the release of wastes to the environment, a threat to human health, or a nuisance. The Permittee shall maintain an inspection log or summary including at least the date and time of inspection, observations made, and any maintenance, repairs, or corrective actions taken by the Permittee. This log of inspections shall be maintained by the Permittee for a period of five years from the date of the inspection and shall be made available to the Division or other permitting authority, upon request.

3. Any duly authorized officer, employee, or representative of the Division may, upon presentation of credentials, enter and inspect any property, premises, or place on or related to the land application sites or facilities at any reasonable time for the purpose of determining compliance with this permit; may inspect or copy any records that must be kept under the terms and conditions of this permit; and may obtain samples of groundwater, surface water, or leachate.

VI. GENERAL CONDITIONS

1. This permit shall become voidable unless the activities of the residuals management program are carried out in accordance with the conditions of this permit, the supporting materials, and in the manner approved by the Division.

2. This permit shall be effective only with respect to the nature and volume of residuals described in the application and other supporting data.

3. Failure to abide by the conditions and limitations contained in this permit may subject the Permittee to an enforcement action by the Division in accordance with North Carolina General Statutes §143-215.6A through §143-215.6C.

4. The annual administering and compliance fee shall be paid by the Permittee within 30 days after being billed by the Division. Failure to pay the fee accordingly may cause the Division to initiate action to revoke this permit, as specified by 15 NCAC 2T .0105 (e).

5. The issuance of this permit does not exempt the Permittee from complying with any and all statutes, rules, regulations, or ordinances, which may be imposed by other government agencies (local, state, and federal) that have jurisdiction. Of particular concern to the Division are applicable river buffer rules in 15A NCAC 02B .0200, erosion and sedimentation control requirements in 15A NCAC Chapter 4 and under the Division's General Permit NCG010000, and any requirements pertaining to wetlands under 15A NCAC 02B .0200 and 02H .0500.

6. This permit may be modified, revoked, and/or reissued to incorporate any conditions, limitations and monitoring requirements the Division deems necessary in order to protect the environment and public health adequately.

7. This permit shall not be automatically transferable. In the event that there is a desire for the class A residuals management program to change ownership or to change the name of the Permittee, a formal permit request shall be submitted to the Division documentation from the parties involved and other supporting materials as may be appropriate. The approval of this request shall be considered on its merits and may or may not be approved.

Permit issued this the 21st day of December, 2007.

NORTH CAROLINA ENVIRONMENTAL MANAGEMENT COMMISSION

Coleen H. Sullins, Director
Division of Water Quality
By Authority of the Environmental Management Commission

Permit Number WQ0003487